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(54) Title: MASP-3, A COMPLEMENT-FIXING ENZYME, AND USES FOR IT

(57) Abstract: The invention relates to the discovery and characterization of mannan binding lectin-associated serine protease-3 (MASP-3), a new serine protease that acts in the MBLectin complement fixation pathway.

INTERNATIONAL SEARCH REPORT

 International Application No
 P 00/00659

 A. CLASSIFICATION OF SUBJECT MATTER
 IPC 7 C12N9/64 G01N33/573

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 C12N G01N

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EMBL, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	DATABASE EMBL/GENBANK/DBJ [Online] databases accession no. AC007920,, 30 June 1999 (1999-06-30) MUZNY D M ET AL: "100% identity in 20aa overlap with seq. id no. 1; 100% identity in 58aa overlap with seq. id no. 2 100% identity in 174 bp overlap with seq. id no. 3; 99,9% identity in 2494 bp overlap with seq id no. 4;99,7% identity in 296 aa overlap with seq. id no. 5 no. 5" XP002901684 abstract	16-18, 52,54
A	--- -/--	1-15, 19-51, 53,55-76

☒ Further documents are listed in the continuation of box C.

☐ Patent family members are listed in annex.

* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

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INTERNATIONAL SEARCH REPORT

International Application No

P. 00/00659

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	<p>DATABASE EMBL/GENBANK/DBJ [Online] databases accession no. AI248851, , 5 November 1998 (1998-11-05) "National Cancer Institute, Cancer Genome Anatomy Project (CGAP) , Tumor Gene Index" XP002901685 63,2% identity in 19aa overlap with seq. id no. 1 abstract</p>	16,52,54
A		1-15, 17-51, 53,55-76
X	<p>--- DATABASE EMBL/GENBANK/DBJ [Online] databases accession no. D28593, 13 April 1994 (1994-04-13) TETSUO SATO ET AL: "Molecular characterization of a novel serine protease involved in jactivation of the complement system by mannose-binding protein" XP002901686 abstract & INT. IMMUNOL, vol. 6, 1994, pages 665-669, 88,6% identity in 1837 bp overlap with seq. id no. 4</p>	16,52,54
A		1-15, 17-51, 53,55-76
X	<p>--- DATABASE SWISSPROT [Online] accession no. P48740, 1 February 1996 (1996-02-01) TAKADA F ET AL: "A new member of the C1s family of complement proteins found in a bactericidal factor, Ra-reactive factor, in human serum" XP002901687 abstract & BIOCHEM. BIOPHYS. RESEARCH COMMUNICATIONS, vol. 196, 1993, pages 1003-1009,</p>	16,52,54
A		1-15, 17-51, 53,55-76
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INTERNATIONAL SEARCH REPORT

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	<p>DATABASE STN INTERNATIONAL [Online] File MEDLINE, MEDLINE accession no. 1999008558 , ENDO Y ET AL: "Two lineages of mannose-binding lectin-associated serine protease (MASP) in vertebrates" XP002901688 abstract & JOURNAL OF IMMUNOLOGY, , vol. 161, no. 9, 1 November 1998 (1998-11-01), pages 4924-4930,</p>	1-76
P,X	<p>---</p> <p>DATABASE STN INTERNATIONAL [Online] File BIOSIS, BIOSIS accession no. PREV 200389401, DAHL M R ET AL: "Mannanbinding lectin associated serine protease 3 (MASP-3): a new component of the lectin pathway of complement activation" XP002901689 abstract & IMMUNOPHARMACOLOGY, vol. 49, no. 1-2, August 2000 (2000-08), page 79</p> <p>-----</p>	1-76

INTERNATIONAL SEARCH REPORT

International application No.
PCT/DK 00/00659

Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☒ Claims Nos.: 53-58, 65-66
because they relate to subject matter not required to be searched by this Authority, namely:
see next sheet*
2. ☒ Claims Nos.: 29, 32, 35
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
see FURTHER INFORMATION sheet PCT/ISA/210
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
☐ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

Continuation of Box I.2

Claims Nos.: 29,32,35

see next sheet **

The applicant's attention is drawn to the fact that claims, or parts of claims, relating to inventions in respect of which no international search report has been established need not be the subject of an international preliminary examination (Rule 66.1(e) PCT). The applicant is advised that the EPO policy when acting as an International Preliminary Examining Authority is normally not to carry out a preliminary examination on matter which has not been searched. This is the case irrespective of whether or not the claims are amended following receipt of the search report or during any Chapter II procedure.

INTERNATIONAL SEARCH REPORT

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*
Claims 53-58, 65-66 relate to methods of treatment of the human or animal body by surgery or by therapy/ diagnostic methods practised on the human or animal body/Rule 39.1.(iv). Nevertheless, a search has been executed for these claims. The search has been based on the alleged effects of the compounds/compositions.

**
Present claims 29, 32 and 35 relate to compounds defined by reference to a desirable characteristic or property, namely their ability to inhibit or disrupt complex formation of MBL and MASP-3 or to inhibit the serine protease activity of MASP-3. The claims cover all compounds having this characteristic or property, whereas the application provides support within the meaning of Article 6 PCT and disclosure within the meaning of Article 5 PCT for only a very limited number of such compounds. In the present case, the claims so lack support, and the application so lacks disclosure, that a meaningful search over the whole of the claimed scope is impossible. Independent of the above reasoning, the claims also lacks clarity (Article 6 PCT). An attempt is made to define the compounds by reference to a result to be achieved. Again, this lack of clarity in the present case is such as to render a meaningful search over the whole of the claimed scope impossible. Consequently, the search has been carried out for those parts of the claims which appear to be clear, supported and disclosed, namely those parts relating to the compounds of claims 30-31, 33-34 and 36-37 respectively.

